

Liquid Waste and Materials Management Plan

In response to the Deepwater Horizon rig incident originating in the Mississippi Canyon Block 252 (MC 252) of the Gulf of Mexico, emergency response oil spill cleanup activities are being performed that will result in waste generation, in addition to oil recovery and processing. The anticipated waste generation activities may include: oil skimming, oil collection (e.g., use of absorbents), decontamination of cleanup equipment, rehabilitation, as well as other shoreline remediation, wildlife activities related to oil spill cleanup. Solid Waste Management is managed under the *Deepwater Horizon (MC-252) Incident Final Solid Waste Management Plans*, (Houma approved June 14, 2010 and Mobile approved June 24, 2010) and liquids are managed under this Liquid Waste and Material Management Plan (LWMMP).

The LWMMP outlines the liquid management procedures and expectations to support proper classification, handling, staging, storage, manifesting, transportation, disposal/recycling of the liquids (waste and recovered products) generated from the spill cleanup activities, and potential reuse/recycling opportunities, conducted in support of the MC 252 incident response.

The LWMMP will be implemented in accordance with all applicable local, state and federal laws and regulations. Additional or revised information regarding site-specific waste management activities, procedures, and locations may be provided as revisions to this plan to accommodate the needs of the MC252 response activities. Amendments may occur only upon mutual agreement by BP and federal and state agencies that provided approval of the original plan.

Waste Stream Identification and Characterization

The liquid waste and material streams that are anticipated from oil spill cleanup activities are defined in Table I-A. The estimated volume generated of each waste stream and reclaimable/recyclable material, is unknown and will depend on the extent of oil spill impact areas, and collection/cleanup operations. Classification of the liquid streams will be determined based on generator knowledge and/or sampling analysis results. All liquid deemed wastes will be characterized in accordance with requirements of the facilities selected for recycling (primarily oil) or waste disposal, as defined in the facility's permit requirements, and applicable federal and state regulations.

Table I-A: Potential Recovered Product/Liquid Waste Streams and Type

Matrix	Type	Description
Liquid	Offshore Liquids (Recovered Product)	Water, oil and emulsion collected during offshore skimming operations. For planning purposes, this material is assumed a mixture of 30% oil and 70% water, with an emulsion layer present.
	Near-Shore Liquids	Water, oil and emulsion collected during near shore skimming. For planning purposes, this material is assumed a mixture of 50% oil and 50% water, with an emulsion layer present.
	On-Shore Liquids	Water, oil and emulsion collected (typically via vacuum truck) on shore. For planning purposes,

		this material is assumed a mixture of 30% oil and 70% water.
	Decontamination Site Liquids	Water, potentially containing some oil, that is collected during management of stormwater at land-based decontamination sites. This category also includes excess decontamination water that accumulates during the closed loop decontamination process. For planning purposes, this material is assumed approximately 95% water and 5% oil. The liquid stream may also include a small amount of approved cleaning solution.
	Oil and Water Samples	Excess field sample waste that is collected when samples are repackaged for lab transport into smaller containers. These samples are uncontaminated with any lab chemicals.
Excess Oil Sample Waste		Contractually, labs performing analysis are responsible for managing the waste from their analysis which includes chemical reagents, solvents and processed samples. They should not be included in this plan or any BP waste plan
Liquid Hazardous Waste	Response activities are not anticipated to generate hazardous waste; however, any waste stream not identified in the LWMMP will be properly characterized for hazardous waste determination	Not anticipated; unknown or suspected hazardous waste not covered under the LWMMP will be properly characterized for waste determination.

Wastes will be managed appropriately from the point of generation until the final disposal or recycle/reuse of the waste. The table below presents the general management of the anticipated waste types from point of generation through the final disposition.

Table I-B: Waste Stream Management

Fluid Type	Location of Collection	Contain and Transport	Staging	Management Method
Reclaimable/ Recyclable Oil/E&P Waste	Offshore/near shore skimming	Offshore and inland barges, frac tanks, vacuum trucks	As identified in approved waste plans	Appropriate recycling or reclamation facility
Oily Water (Non-	Offshore, inshore,	Inland barges		Appropriate

Reclaimable or Recyclable)	and onshore cleanup activities	from skimming operations. Lined containers, vacuum trucks, or similar containment and transported by appropriate designee		permitted treatment/disposal facility
Excess Oil/Water Samples	Houma/Mobile/Field	Drums will be used to collect fluids. Fluids will go to appropriate permitted treatment/disposal facility.		
Liquid Laboratory Analysis Waste	Sampling location	Laboratory will manage the disposal of sample material		
Liquid Hazardous Waste	None anticipated	Appropriate containers, transportation, and disposal in accordance with applicable State and Federal regulations		

Sampling and Analysis of Liquid Streams

The majority of oil-contaminated waste that is generated from response cleanup action to the MC-252 incident will be classified as Exploration and Production (E&P) exempt from the definition of hazardous waste by federal and state regulatory definition (40 CFR 261.4(b)(5). Any oil that is recovered and recycled is exempt from RCRA solid wastes under 40 CFR 261.4(a)(12)(ii). However, in order to comply with the permit requirements of each waste/reclamation facility, wastes will be sampled and analyzed to determine waste characteristics (if applicable) and classifications to verify the material meets facility-specific acceptance criteria, and to complete facility-specific Waste Profiles. Additional testing may be done to determine the best treatability standards for reclamation facilities. Sampling and analysis will also provide additional information to response workers and the public regarding the chemical and physical properties of materials that is generated and managed during the response and that may require transportation and disposal.

Liquids that are deemed a waste will be analyzed for the constituents identified in the Gulf Wide Sampling plan.

On the basis of the initial weathered oil sample results and generator knowledge of crude-contaminated materials that will be generated from emergency response activities, the primary analyses performed on crude oil-contaminated response-related waste liquids that are generated for disposal include the following:

Oil-contaminated liquid that is collected for the first time (i.e. a new waste stream) that is deemed a waste will be sampled and analyzed based on the Gulf Wide Sampling plan. Additional laboratory analyses for chemical and physical properties will be performed on specific waste streams, depending on the source of generation, treatment and disposal facility requirements, and use of the data for treatability studies or for testing alternative recovery and reuse technologies. For barged oil that is expected to be reclaimed and not deemed a waste, the following analysis will be performed:

**Standard: run on vessel
composites from mixing U-M-L
compartment grabs**

Test
density
Hydrogen Sulfide, vapor
Hydrogen Sulfide, liquid
kinematic viscosity @ 2 temps (prefer
30 and 50 C)
Pour Pt
water content by distillation
sediment by extraction

**General testing required for
proper measurement, shipping,
and storage decisions**

method
various
D 5705
UOP-163

various
various
D 4006
D 4870

Fuel Oil Test Slate

Test
Test Slate 1
Flash Point
Ash
TSA
micro carbon residue
ICP for: sodium, aluminum, calcium,
zinc, phosphorus
Sulfur

**Use to test dry oil to determine if
it is fit for Fuel Oil market**

method
see above
various
ISO 6245
ISO-10307
various

IP-470, etc.
various

**Use to help refineries determine if
recovered oil can be processed as
a crude oil**

Refinery Crude Test Slate

Test
Test Slate 1
Sulfur
Salt
ICP for: sodium, aluminum, calcium,
zinc, phosphorus
simulated distillation
organic chlorides
nitrogen
Nickel
vanadium
Iron
asphaltenes, heptane insolubles
Acid Number
Free Water

method
see above
Various
D 6470

IP-470, etc.
D 7169
D 4929
various
various
various
various
D6560
D664
BSW

As part of the liquids management plan, there are several potential waste streams likely to be encountered:

- Crude oil and water from near shore and deep water skimming operations
- Used oil and water from vessel maintenance (contractor waste)
- Bilge water from vessel maintenance (contractor waste)
- Decontamination water and storm water
- Sanitary Waste

Final Disposition/Liquid Management

Only licensed or permitted waste management and disposal, re-processing or recycling facilities (with the exception of recycle facilities for common items such as plastic water bottle, aluminum cans, cardboard, etc) that are listed in this LWMMP will be used. Additional facilities that are approved by BP for potential use will be added as a revision to this LWMMP.

Table I-3 Approved Disposal and Treatment Sites for Liquid Material-Operational Constraints

Facility Name	Address	Material Accepted	Throughput Constraints	Comments
Aaron Oil Company, Inc	713 Bill Miles Drive Saraland, AL	Non-hazardous used oil recycling	Estimated oil processing rate is 1,000 to 1500 bbls per day	Facility is leasing 20,000 bbl waterfront tank. Facility is 2.5 miles from the water; truck access only
APEX Environmental Services LLC	7455 Rangeline Road Theodore, AL	Non-hazardous oilfield wastes, wastewater treatment and solidification	Maximum daily discharge to POTW is 300,000 gpd	Storage capacity is approximately 74,000 bbls (barges, plant tanks and frac tanks)
Liquid Environmental Services	1980 Avenue A Mobile, AL	Non hazardous (WWT and oil recovery)		Rail Access
Clean Harbors (Theodore Dock)	Claudia land, Port of Theodore, Theodore, AL	Waste Treatment	8500 bbls/day	Newly constructed oily-water treatment; dock space available for barges
Holcim (US) Inc.	3051 Hamilton Blvd, Theodore, AL36615	Alternative Fuels and Raw Materials facility that supplies used oil for fuel and non hazardous solid waste derived fuel		18,000 gallon vertical above-grade blend tank and one 150,000 gallon off spec fuel tank

Newpark Port Fourchon Transfer Station	145 17th Street (Site#1) and 226 16th St (Site#2), Port Fourchon, LA	Transfer Stations		
Newpark	Port Arthur, TX: Permit code STF001 8300 Pleasure Islet, Port Arthur Texas	NewPark collects E&P exempt waste in barges that are shipped to Port Arthur, TX where the waste is transferred to Fannett, TX for deep well injection		Can support barge or truck transfer directly into transport barge
NewPark	Intracoastal City, LA; Site Code5703 12334 Offshore Rd, Abbeville, LA 70510	NewPark collects E&P exempt waste in barges that are shipped to Port Arthur, TX where the waste is transferred to Fannett, TX for deep well injection	Capacity is limited by barge capacity. Typically can transfer 15Kbbbls/day	Can support barge or truck transfer directly into transport barge
NewPark	Morgan City, LA; Site Code 5102 101 Second St, Morgan City, LA 70381	NewPark collects E&P exempt waste in barges that are shipped to Port Arthur, TX where the waste is transferred to Fannett, TX for deep well injection	Capacity is limited by barge capacity. Typically can transfer 15Kbbbls/day	Can support barge or truck transfer directly into transport barge
NewPark	Fourchon, LA #1: Site Code 2910 145 17 th St, Golden Meadow, LA 70357	NewPark collects E&P exempt waste in barges that are shipped to Port Arthur, TX where the waste is transferred to Fannett, TX for deep well injection	Capacity is limited by barge capacity. Typically can transfer 20Kbbbls/day	Can support barge or truck transfer directly into transport barge
NewPark	Fourchon,	NewPark collects	Capacity is	Can support barge

	LA #2; Site Code 2913 228 16 th St, Golden Meadow, LA 70357	E&P exempt waste in barges that are shipped to Port Arthur, TX where the waste is transferred to Fannett, TX for deep well injection	limited by barge capacity. Typically can transfer 20Kbbbls/day	or truck transfer directly into transport barge
River Birch	2000 S Kenner Rd Avondale, LA 70785	River Birch Saltwater Injection Well	Injection capacity of 12Kbbbls/day	No barge access, truck only
Intergulf Corporation	10020 Bayport Blvd, Pasadena, TX	Wastewater Treatment and Oil Recovery		
FCC Environmental	4415 East Greenwood Street, Baytown, TX	Non-haz used Oil recycling and fuel recovery		

As needed other properly permitted facilities may be added to this list. Each facility will be reviewed by BP and contractor to assure that they have the appropriate permits to receive the recovered waste for disposal or reuse/recycle. Any new waste management alternative technologies will also follow this auditing process. The Mobile and/or Houma Joint IC will be notified when any new alternative technologies or disposal/ recycle/reuse sites are identified for use.